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Paraspinibarbus, a New Genus of Cyprinid Fishes from the Red River Basin

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Abstract *Paraspinibarbus*, a new and monotypic genus, is erected for *Spinibarbus macracanthus* Pellegrin et Chevey, 1936, a cyprinid from the Red River basin. It is characterized by a procumbent predorsal spine and a very thick lower lip with a continuous postlabial groove. *Balantiocheilus hekouensis* Wu, 1977 is a junior subjective synonym of *Paraspinibarbus macracanthus*. A lectotype is designated for *S. macracanthus*.

Several cyprinid genera are characterized by the presence of a procumbent predorsal spine (an external anterior pointed process of the first proximal radial). Their interrelationships still remain to be investigated, but there is no strong indication that they form a monophyletic lineage.

Rohtee Sykes, 1839 (type species *R. ogilbii* Sykes, 1839, by subsequent designation of Bleeker, 1864) is an Indian monotypic genus (Silas, 1952) characterized by 13–14 branched anal rays and 55 lateral line scales (Hora, 1937). *Mystacoleucus* Günther, 1868 (type species *Capoeta padangensis* Bleeker, 1852, by monotypy) is considered to be a subgenus of *Rohtee* by Silas (1952), an opinion not followed by Jayaram (1981). We could not see any material of *R. ogilbii*, but from several publications and illustrations, it seems unlikely that *R. ogilbii* is congeneric with *Mystacoleucus* species which are distinguishable by having 6–10 branched anal rays, 24–39 lateral line scales and the colour pattern. *Acanthonotus* Day, 1888 (type species *A. argenteus* Day, 1888, by monotypy, preoccupied) and *Matsya* Day, 1889 (replacement name for *Acanthonotus*) are junior subjective synonyms of *Mystacoleucus*.

The East Asian species with a procumbent predorsal spine are distinguished from these two genera by having only 5 branched anal rays. There have been numerous changes in their taxonomy at the generic level. Oshima (1919) created the monotypic *Spinibarbus* for *S. hollandi* Oshima, 1919 with a smooth and slender last simple dorsal ray; later (Oshima, 1926) he created *Spinibarbichthys* (type species *S. denticulatus* Oshima, 1926, by original designation) on the basis of a stout and serrated last simple dorsal ray. Lin (1933), Pellegrin and Chevey (1936) and Harada (1943) implicitely regarded *Spinibarbus* and *Spinibarbichthys* as synonyms.

Rendahl (1926) treated *Spinibarbus* as a subgenus of *Mystacoleucus* and later (Rendahl, 1928, 1932) he also considered *Spinibarbichthys* as a subgenus of *Mystacoleucus*. Hora (1937) considered both *Spinibarbus* and *Spinibarbichthys* as synonyms of *Matsya*; later he (Hora, 1939) revalidated both genera. Nichols and Pope (1927) considered *Spinibarbus* as a subgenus of the catch-all *Barbus*, and *Spinibarbichthys* as a synonym of *Spinibarbus*, while Tchang (1931) implicitely treated both as valid subgenera of *Barbus*. Banarescu (1972) treated *Spinibarbus* as valid, with *Spinibarbichthys* as a synonym.

Wu et al. (1963) created the monotypic *Parator* (as a subgenus of *Tor* Gray, 1834) for *Tor zonatus* Lin, 1935, a species with a median lobe on lower lip. Banarescu (1972) apparently overlooked this publication and placed *Tor zonatus* in *Spinibarbus*. Wu et al. (1977) considered *Spinibarbus* as a subgenus of *Barbodes* Bleeker, 1860, *Parator* as a subgenus of *Tor* and *Spinibarbichthys* as a synonym of *Spinibarbus*. Yen (1978) elevated *Parator* to the genus level and included *T. zonatus* and *Spinibarbus macracanthus* Pellegrin et Chevey, 1936 in the genus. *Spinibarbus macracanthus* was also placed in the genus *Balantiocheilos* Bleeker, 1860 (as *B. hekouensis* Wu, 1977) by Wu et al. (1977).

Such an erratic nomenclatural history is due to the emphasis put on the procumbent predorsal spine by some authors (e.g. Rendahl, 1926, 1928,

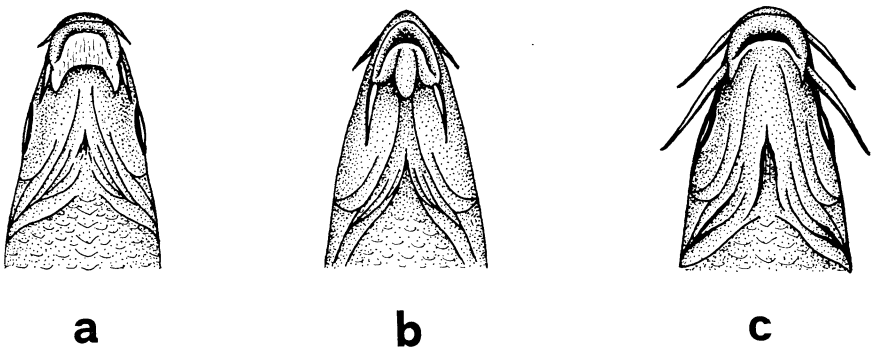

Fig. 1. Lips of a) *Paraspinibarbus macracanthus*, b) *Parator zonatus*, and c) *Spinibarbus sinensis*.

1932; Banarescu, 1972) while others gave more attention to the structure and shape of the lower lip (e.g. Wu et al., 1977). The available information does not allow us to say which (if any) of these characters is an autapomorphy and which arose polyphyletically.

In *Spinibarbus*, the lower lip is not developed and is confined to the sides of the lower jaw; it has no median lobe and the postlabial groove is interrupted in the middle (Fig. 1c). On the contrary, in *Parator*, the lower lip is very well developed, conspicuously divided into a median and two lateral lobes. The median lobe reaches behind the corner of the mouth and the postlabial groove is continuous under the median lobe (Fig. 1b). We consider that both *Spinibarbus* and *Parator* are valid genera. However, *Spinibarbus macracanthus* does not fit to any of these definitions and we consider it as representing a third genus, a conclusion already reached by Wu et al. (1977) who placed *S. macracanthus* (as *Balantioncheilus hekouensis*) in a separate genus. As we demonstrate hereunder, *S. macracanthus* cannot be congeneric with *Balantiocheilos* and thus belongs to a distinct, new genus.

Material and methods

Measurements and counts follow Kottelat (1984). Fin ray counts are given in the following sequence: simple rays/branched rays; 1/2 refers to the last branched ray borne by the same pterygiophore as the penultimate ray. Abbreviations used are as follows: KIZ, Kunming Institute of Zoology; MNHN, Muséum National d'Histoire Naturelle, Paris.

Paraspinibarbus gen. nov.

Type species. *Spinibarbus macracanthus* Pellegrin et Chevey, 1936.

Diagnosis. Snout obtuse, produced anteriorly. Mouth subinferior, horseshoe-shaped. Upper jaw protractile. Lips very thick, fleshy (Fig. 1a). Median part of upper lip covered with rostral fold. Lower lip thicker than upper one, continuous around corners of mouth. Continuous postlabial groove. Two pairs of barbels. A procumbent predorsal spine present. Last simple dorsal ray longer than head, strong, osseous, with minute serrations along posterior margin. Nine branched dorsal rays. Anal fin having no spine, but three simple and five branched rays. Complete lateral line ending at midheight of caudal fin base. Pharyngeal teeth in three rows. Gill membrane connected to isthmus. See Table 1 for comparison with possibly allied genera. See description of the type and only known species for additional data.

Etymology. From *para* (Greek) meaning close or near, and *Spinibarbus*, an apparently related genus.

Paraspinibarbus macracanthus
(Pellegrin et Chevey, 1936)
(Fig. 2)

Spinibarbus macracanthus Pellegrin and Chevey, 1936: 376, fig. 1 (type locality: Sud-Annam; lectotype: MNHN 1936-2; paralectotype: MNHN 1936-3; additional locality: delta du Fleuve Rouge); Chevey and Lemasson, 1937: 58, pl. 14, fig. 32 (idem); Banarescu, 1972: 111, figs. 6–7 (redescription; Boi R., Viet Nam).

Balantiocheilus hekouensis Wu in Wu et al., 1977:

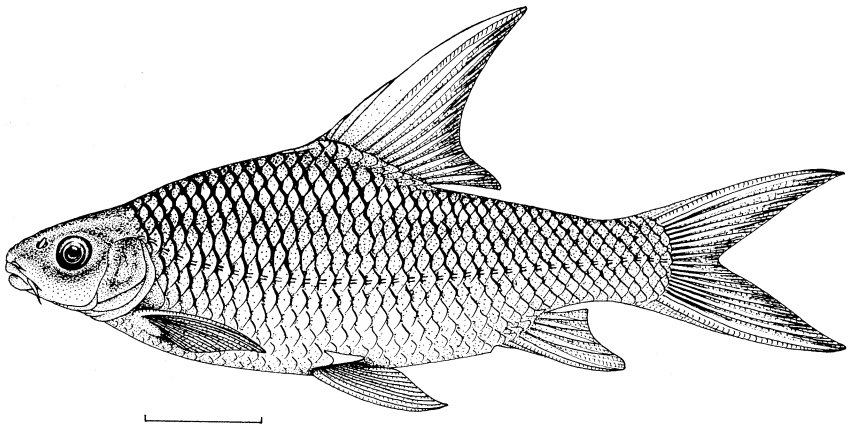

Fig. 2. *Paraspinibarbus macracanthus*. KIZ 655033, 220 mm SL, Hekou. Scale bar is 40 mm.

332, fig. 7-65 (type locality: Hekou, Yunnan; syntypes: Institute of Hydrobiology, Wuhan 644035, 655034, 655036, 6410016–017 [5]). New synonym.

Parator macracanthus: Yen, 1978: 87, fig. 37 (northern Viet Nam).

Material examined. MNHN 36-2, lectotype (present designation), 283 mm SL, Sud-Annam; MNHN 36-3, 1 ex., paralectotype, 71 mm SL, delta du Fleuve Rouge, Viet Nam; KIZ 655033, 1 ex., 220 mm SL, Hekou Co., Yunnan, China; KIZ 6440545, 1 ex., 246 mm SL, same data.

Description (based on the two specimens from Hekou). D $4/9_{1/2}$, A $3/5_{1/2}$, P 1/16, V 1/9. Gill rakers on first gill arch 13. Pharyngeal teeth in three rows, with dental forumla 2, 3, 5–5, 3, 2. 36–40 scales along lateral line, 8 between lateral line and dorsal fin origin and 4 between lateral line and pelvic fin base; 10 predorsal scales and 18 circumpeduncular scales.

Body depth 36–39% SL; length of caudal peduncle 16–17% SL, depth of caudal peduncle 13–14% SL; predorsal distance 53–54% SL; prepelvic distance 50–51% SL; distance from pectoral fin base to pelvic fin base 28–29% SL; distance from pelvic fin base to anal fin origin 26–28% SL; head length 22–23% SL; snout length 8–9% SL; eye diameter 5–6% SL.

Body rhomboid, moderately compressed. Abdomen rounded. Snout obtuse, much longer than eye diameter. A groove along anterior margin of lachrymal. Eye supero-lateral. Interorbital convex. Two pairs of barbels; rostral ones slender and maxillary ones rather bulky, equal to eye diameter. Small tubercles present at least on lachrymal.

Origin of dorsal fin nearly opposite to pelvic fin base. Posterior edge of dorsal fin deeply concave. Anal fin reaches base of caudal fin, its outer margin concave; its origin midway between pelvic fin base and caudal fin base. Pectoral fins pointed, extending to 3–4 scales in front of pelvic fin base. Pelvic fin insertion midway between pectoral fin base and anal fin origin. Caudal fin deeply forked, with pointed lobes.

Scales of moderate size; those on abdomen smaller. Anus close to anal fin origin. Gill rakers closely set, with short processes along their inner margin. First pharyngeal tooth on the main row small, blunt at tip. Second tooth on the main row rather larger, molar-like. Remaining teeth compressed with declined grinding sur-

Table 1. Comparison of characters of *Paraspinibarbus* and similar or related genera.

	Spinibarbus	*Parator*	*Balantiocheilos*	*Paraspinibarbus*
Procumbent predorsal spine	present	present	absent	present
Postlabial groove	interrupted in the middle	continuous	continuous	continuous
Median lobe of lower lip	none	well developed	none	none
Barbels	4	4	0 or 2	4

faces. Air bladder with two chambers.

Colouration: Back dark, greyish brown; belly greyish white. Scales with black margins. Dorsal and caudal fins with blackish outer margins; other fins greyish white.

Distribution. Only known from the Red River basin in Yunnan, China and Vietnam and in coastal drainages of Annam.

Discussion. The two described specimens are topotypes of *Balantiocheilus hekouensis* Wu. The structure and shape of the lower lip, the procumbent predorsal spine and meristic characters are in full agreement with the types of *Paraspinibarbus macracanthus*. There are a few differences in morphometric characters (for data of types, see Banarescu, 1972): body depth, length of caudal peduncle, depth of caudal peduncle, distance from pectoral fin base to pelvic fin base and from pelvic fin base to anal fin origin. We interpret these minor differences as geographical variation or as the result of different methods for measurements. Consequently, we regard *B. hekouensis* as a junior subjective synonym of *P. macracanthus*.

Wu et al. (1977) included this species in *Balantiocheilus* Bleeker, 1860 (whose correct spelling is *Balantiocheilos*). This taxonomic treatment was apparently based solely on similarities in the shape of the lower lip. *Balantiocheilos melanopterus* (Bleeker, 1851), type species of *Balantiocheilos*, is distinguished from *Paraspinibarbus* by the following characters: no procumbent predorsal spine; upper lip thin, finely crenulated (vs. thick and not crenulated in *Paraspinibarbus*); tubercles on lachrymal absent (vs. present); last simple dorsal ray strong with a few prominent serrae (vs. very strong with numerous small serrae); snout about equal to eye diameter (vs. much longer); mouth cleft about level with lower margin of eye (vs. about one eye diameter below eye); no barbels or a pair of small mandibulary barbels (vs. 2 pairs). Additionally, the head construction seems very different in the two genera. *Balantiocheilos* has lachrymals coming very close to each other anteriorly and a small mouth; a somewhat similar construction is also seen in other southeast Asian genera like *Sikukia*, *Amblyrhynchichthys*, *Albulichthys*, etc.

Pellegrin and Chevey (1936) based their description on two specimens, one mentioned in the main text and one in the foot note. As none of them is explicitely designated as type or holotype, both are syntypes [ICZN Arts. 73(a)(i), 73(b)]. Banarescu (1972) considered MNHN 1936-2 as the holotype. This cannot be interpreted as a lectotype designation according to ICZN Art. 74 (b) (English version; French one not entirely equivalent!) as more than a single specimen is involved. In order to avoid any confusion, MNHN 1936-2 is here designated as lectotype.

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ソンコイ川流域産コイ科の新属 *Paraspinibarbus*

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ソンコイ川流域産のコイ科魚類 *Spinibarbus macracanthus* Pellegrin et Chevey, 1936 のための新属 *Paraspinibarbus* を創設した．本属は前背鰭棘を持つこと，下唇は非常に厚く後唇溝は連続することが特徴である．*Balantiocheilus hekouensis* Wu, 1977 は *Paraspinibarbus macracanthus* の主観ジュニアシノニムである．*S. macracanthus* の後模式標本を指定した．